



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

April 20, 2015

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-4301992, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin

Chief

Operator's Well No: 5916

Farm Name: CALDWELL, J. L.

API Well Number: 47-4301992

Permit Type: Plugging

Date Issued: 04/20/2015

Promoting a healthy environment.

04/24/2015

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

Drilled 1915

FORM WW-4 (B)
Observe
File Copy
(Rev. 2/01)

1) Date: 2/27/2015
2) Operator's Well No. 805916 P&A
3) API Well No. 47-043-01992

OL 5249300
100"

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil _____ Gas X Liquid injection _____ Waste disposal _____
(Is Gas, Production X or Underground storage _____) Deep _____ Shallow X
- 5) Location: Elevation 689' Watershed Sixmile Creek
District Laurel Hill County Lincoln Quadrangle Branchland, WV 7.5'
- 6) Well Operator Chesapeake Appalachia, L.L.C. 7) Designated Agent Jessica Greathouse
Address P.O. Box 18496 Address P.O. Box 6070
Oklahoma City, OK 73154-0496 Charleston, WV 25362
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Ralph Triplett Name Chesapeake Appalachia, L.L.C.
Address 5539 McClellan Highway Address P.O. Box 18496
Branchland, WV 25506 Oklahoma City, OK 73154-0496

10) Work Order: The work order for the manner of plugging this well is as follows:

See Attached Sheet

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work Order approved by Inspector [Signature] Date 3-18-15

RECEIVED
Office of Oil and Gas
MAR 20 2015
WV Department of
Environmental Protection

04/24/2015

805916 P&A PROCEDURE

NOTE: Original 2", packer and 3" were pulled and replaced with 1394' of 2" with packer at 1195'

Elev. 689'

- 1) Prepare road and location, MIRU service rig
- 2) RIH with tools to check TD of seating collar at 1389'
- 3) Attempt to pull 2" and packer
 - A) If successful
 - a) Run W.S. to 1390', spot gel, pull W.S. to 1360'
 - b) Spot 100' cement plug 1360'-1260', pull W.S. to 1190'
 - c) Spot 100' cement plug 1190'-1090', pull W.S.
 - d) Proceed to step 4
 - B) If unsuccessful
 - a) Swab 2" as dry as possible
 - b) Pump 100' cement plug 1390'-1290', displace with 5 bbl water
 - c) Cut 2" at free-point approximately at 1165'
 - d) Spot 100' cement plug 1165'-1065', pull W.S.
 - e) Proceed to step 4
- 4) RIH with tools to confirm top of plug is above 1100', if not then reset plug
- 5) Cut 6 5/8" at free-point approximately at 625', and pull
- 6) TIH with W.S. to 625', spot gel
- 7) Spot 100' cement plug 625'-525', pull W.S. to 430'
- 8) Spot 100' cement plug 430'-330', pull W.S. to 250'
- 9) Spot 100' cement plug 250'-150', pull W.S. to 100'
- 10) Spot 100' cement plug 100'-surface
- 11) Pull W.S. and top off with cement
- 12) Erect monument and reclaim as prescribed by law

OK
Jwm

HUNTINGTON DEVELOPMENT & GAS CO.

Well 805916
API 47-043-01992P

Serial Well No. **5916**
42

Lease No.

Map Square **32-47**

RECORD OF WELL No. 5916 21 on the Caldwell Cons. Farm of Acres in Laurel Hill District Lincoln County Hubball Field, State of W. Va. Right Bank of Six Mile Creek.		CASTING AND TUBING SIZE USED IN DRILLING LEFT IN WELL 16 13 10 18 18 8 1/4 151 00 6% 1116 1116 5 3/16 4% 4 3 148 148 2 1270 1270			TEST BEFORE SHOT of Water in _____ inch 10ths _____ of Merc. in _____ inch 10ths 300,000 Volume _____ Cu. ft. TEST AFTER SHOT of Water in _____ inch 10ths _____ of Merc. in _____ inch 10ths 500,000 Volume _____ Cu. ft. Rock Pressure 410 Date Shot 12-31-15 Size of Torpedo 100 lbs Oil Flowed _____ bbls. 1st 24 hrs. Oil Pumped _____ bbls. 1st 24 hrs.	
Rig Commenced 192 Rig Completed 192 Drilling Commenced 12-4-15 192 Drilling Completed 12-30-15 192 Drilling to cost _____ per foot Contractor is: H. V. Heabon Address: _____ Driller's Names Danford & Chichester		SHUT IN Date 12-31-15 in 2" Tubing or Casing Size of Packer 6-5/8x3x2 Kind of Packer Special Gas 1st Perf. Set 145' from bottom 2nd Perf. Set _____ from bottom			Well abandoned and Plugged _____ 19____	

DRILLER'S RECORD

Formation	Top	Bottom	Thickness	Remarks
Clay	0	18		Gas from Big Injun From 1325-1345'
Sand	18	60		
Slate	60	120		Fresh water 125-130'
Sand	120	140		Show of Gas in Big Lime 1204-1207'
Slate & shells	140	204		Shot in Big Injun sand with 100 qts. N.G. betwen 1325 & 1350'
Coal	204	207		Bottom hole packer used on 6-5/8" casing.
Slate & shells	207	320		
Sand	320	345		Salt water 390' hole full
Slate	345	390		Open flow test from gas of Big Lime 67,000 cu.ft.
Coal	390	400		Gas from Big Injun sand taken thru 2" tubing.
Slate & shells	400	475		Gas from Big lime taken thru 6-5/8" casing.
Salt sand	475	855		
Slate	855	880		
Red rock	880	885		
Lime	885	898		
Red rock	898	903		
Lime	885	898		
Red rock	898	903		
Slate & shells	903	945		
Maxton sand	945	980		
Slate & shells	980	1020		
Red rock	1020	1032		
Slate	1032	1067		
Little lime	1067	1097		
Pencil cave	1097	1102		
Big lime	1102	1295		Gas in lime 1212' small showing)
Slate	1295	1302		
Red rock	1302	1320		
Sand (Injun)	1320	1365		Gas 1345 to 1345'
Slate	1365	1418		
TOTAL DEPTH		1418'		

04/24/2015

Received
Office of Oil & Gas
MAR 06 2015

WW4-A
Revised
2/01

1) Date: 2/27/2015
2) Operator's Well No. 805916 P&A
3) API Well No. 47-043-01992

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name Mary B. Tate
Address P.O. Box 496
Hamlin, WV 25523

(b) Name Marion S. Steinert,
Address Shoop Kimber, Jr. and
George Kimber Trustees
217 Sturbridge Drive
Wyomissing, PA 19610

(c) Name Janis D. Thomas - Trustee of
Address Janis D. Thomas Recoverable
Trust at P.O. Box 409
Gnadenhutten, OH 44629

6) Inspector Ralph Triplett
Address 5539 McClellan Highway
Branchland, WV 25506

Telephone 304-389-0350

5) Coal Operator
(a) Name None

Coal Owner(s) with Declaration
(b) Name Mary B. Tate
Address P.O. Box 496
Hamlin, WV 25523

Name Marion S. Steinert,
Address Shoop Kimber, Jr. and
George Kimber Trustees
217 Sturbridge Drive
Wyomissing, PA 19610

Name Janis D. Thomas - Trustee of
Address Janis D. Thomas Recoverable
Trust at P.O. Box 409
Gnadenhutten, OH 44629

Coal Lessee with Declaration
(c) Name None

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed the Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of the Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.



Well Operator: Chesapeake Appalachia, L.L.C.
By: R. Triplett
Its: Completion Superintendent
Address: P.O. Box 18496
Oklahoma City, OK 73154-0496
Telephone: 405-935-4073

Subscribed and sworn before me this 27th day of February the year of 2015
Pkyllis A. Copley Notary Public
My Commission Expires September 16, 2018

RECEIVED
Office of Oil and Gas

APR 20 2015

WV Department of
Environmental Protection
04/24/2015

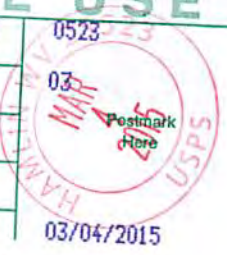
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Certified Fee	\$3.30	
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Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$7.40	

805916 P&A (surface and coal)
 Mary B. Tate
 P.O. Box 496
 Hamlin, WV 25523


for Instructions

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Return Receipt Fee (Endorsement Required)	\$2.70	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$7.40	

805916 P&A (surface and coal)
 Janis D. Thomas, Trustee of Janis D. Thomas Recoverable Trust
 P.O. Box 409
 Gnadenhutten, OH 44629

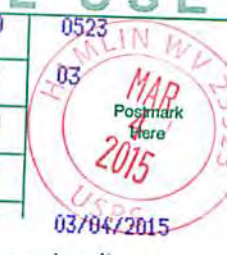
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Return Receipt Fee (Endorsement Required)	\$2.70	
Restricted Delivery Fee (Endorsement Required)	\$0.00	
Total Postage & Fees	\$7.40	

Sent To
 Street & Apt. / or PO Box No
 City, State, Zi

805916 P&A (surface and coal)
 Marion Steinert, Shoop Kimber Jr. and George Kimber Trustees
 217 Sturbridge Drive
 Wyomissing, PA 19610

PS Form 3800 See Reverse for Instructions

Received
Office of Oil & Gas
MAR 06 2015

04/24/2015

4301992P

Form WW-9
Rev. 02/01

API Number 47-043-01992
Operator's Well No. 805916 P&A

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name Chesapeake Appalachia, L.L.C. OP Code 494477557
Watershed Sixmile Creek Quadrangle Branchland, WV 7.5'
Elevation 689' County Lincoln District Laurel Hill

Description of anticipated Pit Waste: Plugging Returns/Cement

Will a synthetic liner be used in the pit? Yes 20 MI.

Proposed Disposal Method For Treated Pit Wastes:
 Land Application
 Underground Injection (UIC Permit Number _____)
 Reuse (at API Number _____)
 Off Site Disposal (Supply form WW-9 for disposal location)
 Other (Explain _____)

Proposed Work For Which Pit Will Be Used:
 Drilling
 Workover
 Swabbing
 Plugging
 Other (Explain _____)

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on December 31, 1999, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

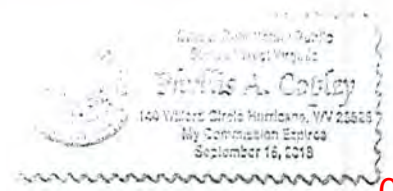
Company Official Signature [Signature]
Company Official (Typed Name) Rob Schindler
Company Official Title Completion Superintendent

Subscribed and sworn before me this 27th day of February, 2015.
[Signature] Notary Public.

My Commission Expires September 16, 2018
Office of Oil and Gas

APR 20 2015

WV Department of Environmental Protection

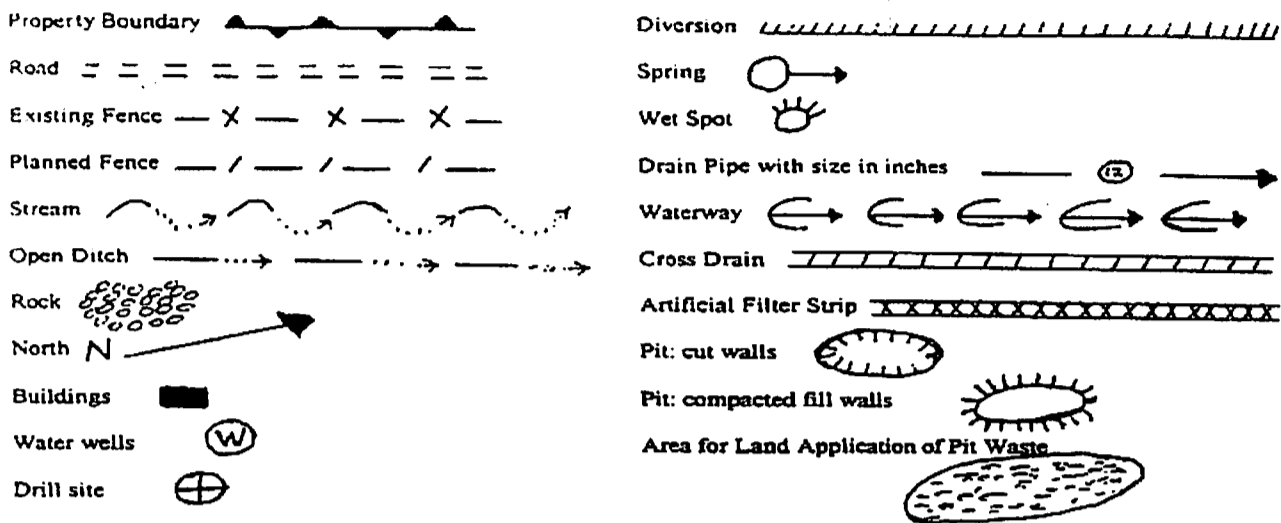


04/24/2015

Attachment #1

API #: 47-043-01992
 Operator's Well No. 805916 P&A

LEGEND



Proposed Revegetation Treatment: Acres Disturbed 1.0 Prevegetation pH 6.1

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 1/3 TON lbs/acre (500 lbs minimum)

Mulch Hay 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
CHESAPEAKE CONTRACTOR'S MIX	40	ORCHARD GRASS	15
ALSIKE CLOVER	5	ALSIKE CLOVER	5
ANNUAL RYE	15		

Attach:
 Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

Title: inspector OOG

Date: 3-18-15

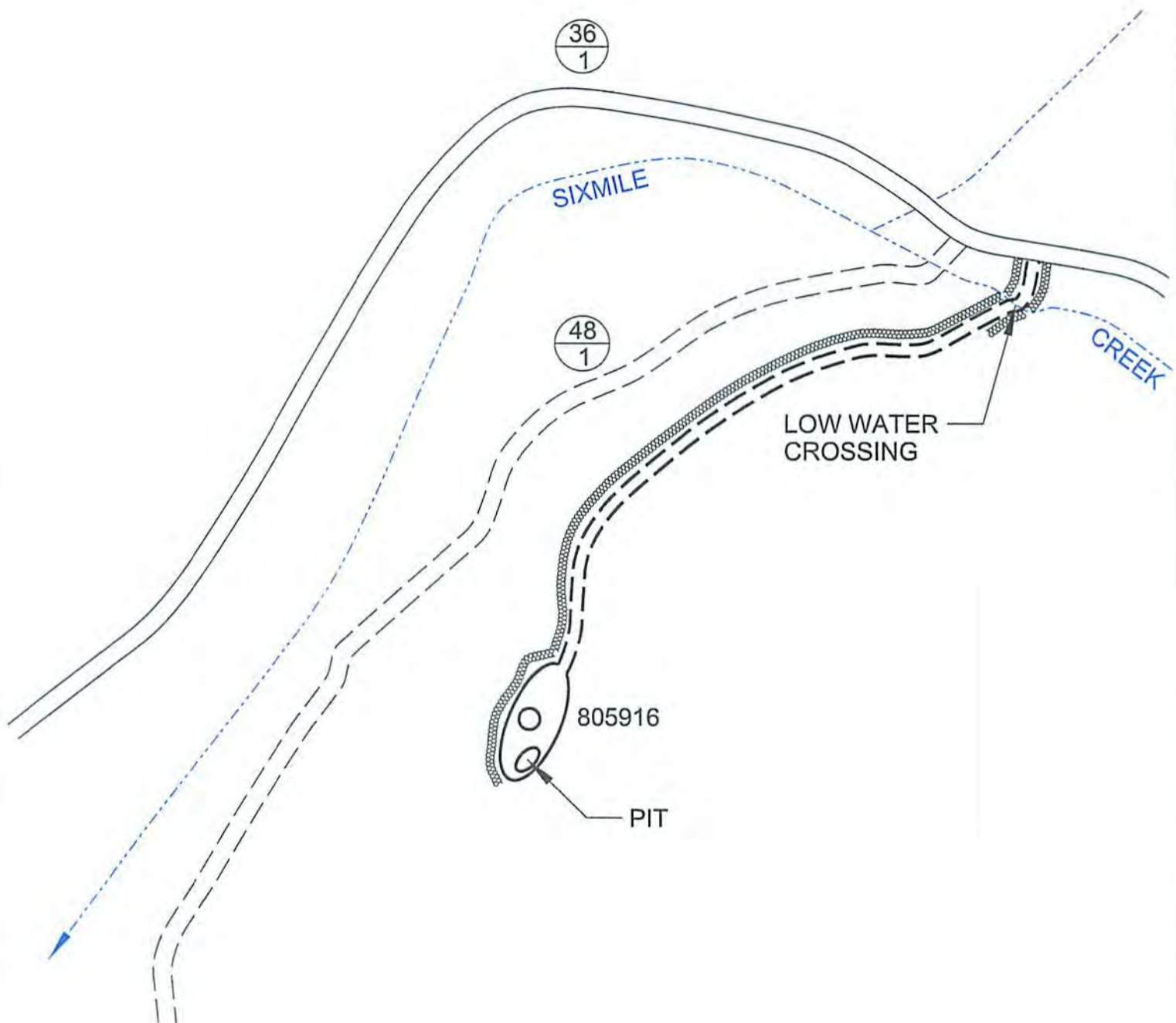
Field Reviewed? () Yes () No

4301992A

CHESAPEAKE APPALACHIA, L.L.C.

RECLAMATION DIAGRAM
WELL LOCATION 805916

API 47-043-01992



GENERAL NOTES

This drawing is a schematic representation of the well site and access road. Proposed structures such as well site, drilling pit, roadways, culverts, sediment barriers, etc. are shown in approximate pre-planning configurations.

All culvert pipes will be a minimum of 15 inches in diameter. All culvert pipes installed will be accompanied by an entrance sump with dimensions no less than 3 feet (width) x 3 feet (length) x 4 feet (deep). Culverts will be installed at an angle to ensure proper flow. The out fall of culverts will be protected from erosion and sedimentation using large rocks or other sediment controls deemed necessary in the prevention of erosion and sedimentation. Storm water from the ditches to the culverts will be directed to stable natural vegetative areas. Where culverts are not practical, operator will have other sediment control in place to minimize erosion sedimentation.

Cross drains, broad based dips, water bars, and diversion ditches, will be employed during the construction phase. These erosion and sediment control structures will be used to control erosion and sedimentation during the construction phase, where applicable, and in areas that will allow. These structures will be considered permanent and used as such.

Permanent seeding: See Attachment #1.

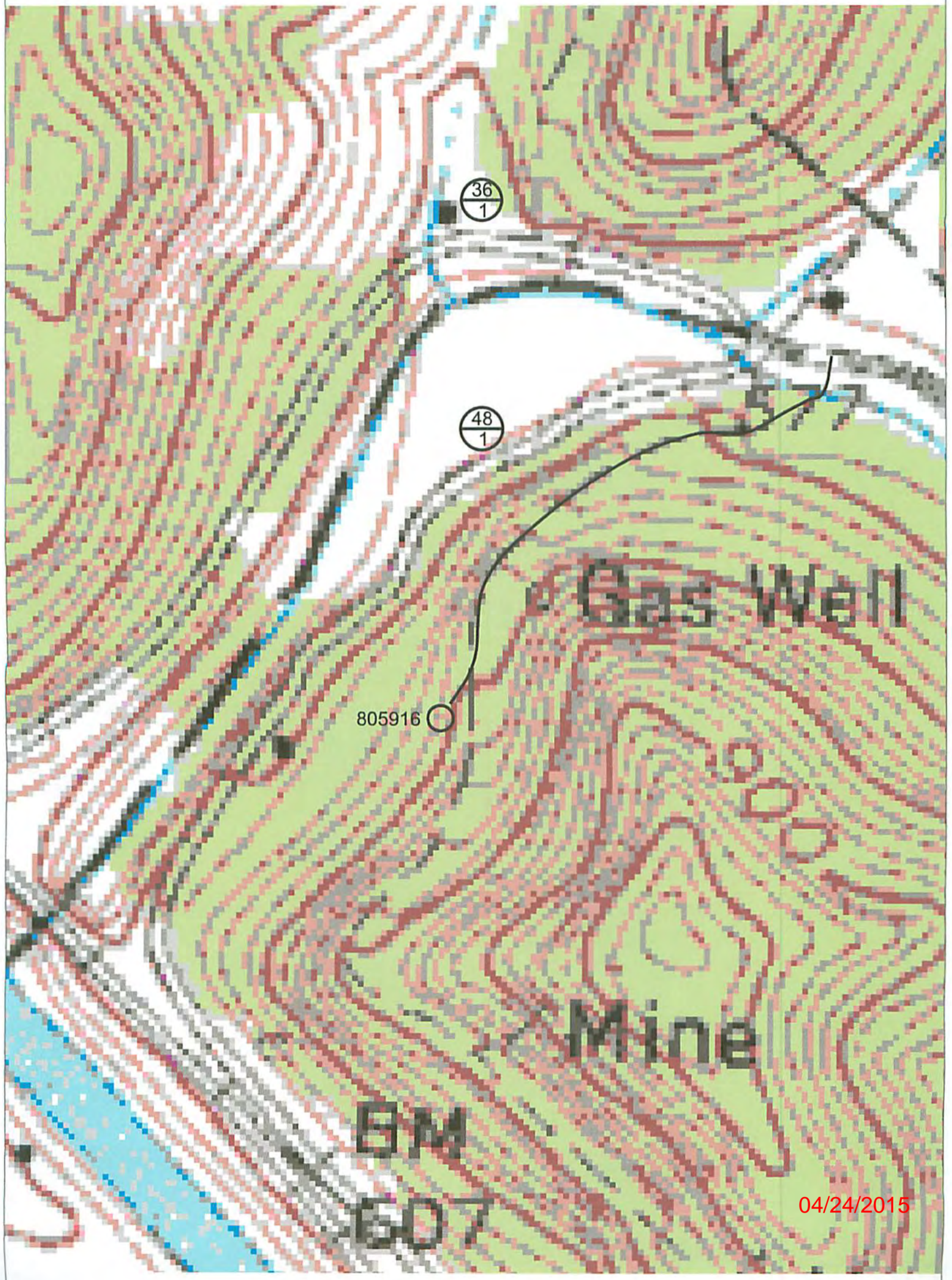
04/24/2015

43 01992P

CHESAPEAKE APPALACHIA, L.L.C.

TOPOGRAPHICAL MAP OF ACCESS AND
WELL LOCATION 805916

API 47-043-01992



04/24/2015

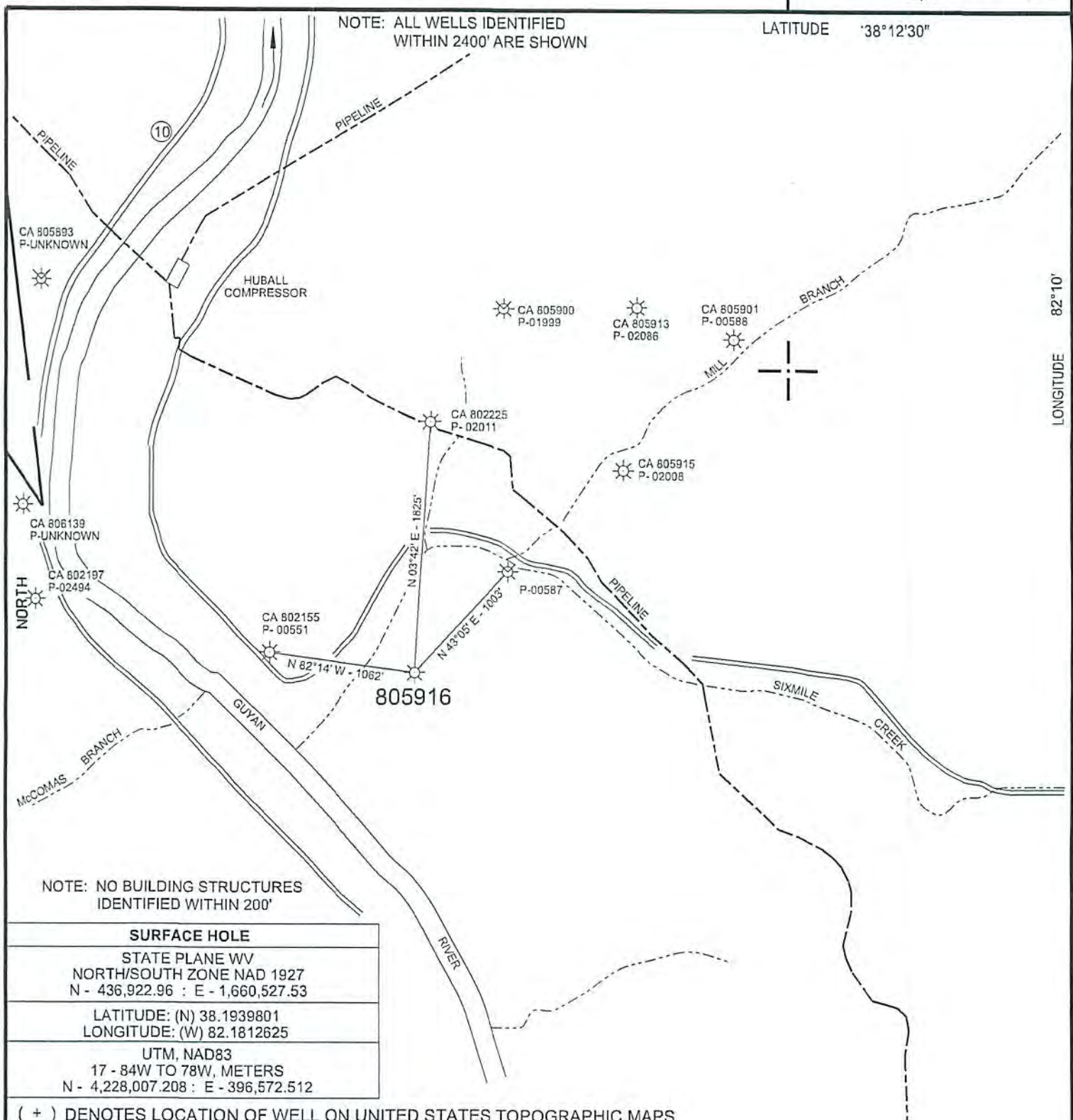
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4,202'

LATITUDE '38°12'30"

LONGITUDE 82°10'

NOTE: ALL WELLS IDENTIFIED WITHIN 2400' ARE SHOWN



NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

SURFACE HOLE	
STATE PLANE WV NORTH/SOUTH ZONE NAD 1927 N - 436,922.96 : E - 1,660,527.53	
LATITUDE: (N) 38.1939801 LONGITUDE: (W) 82.1812625	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,228,007.208 : E - 396,572.512	

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO.	805916 P&A.DGN
DRAWING NO.	805916 P&A
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1 : 200
PROVEN SOURCE OF ELEVATION	MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

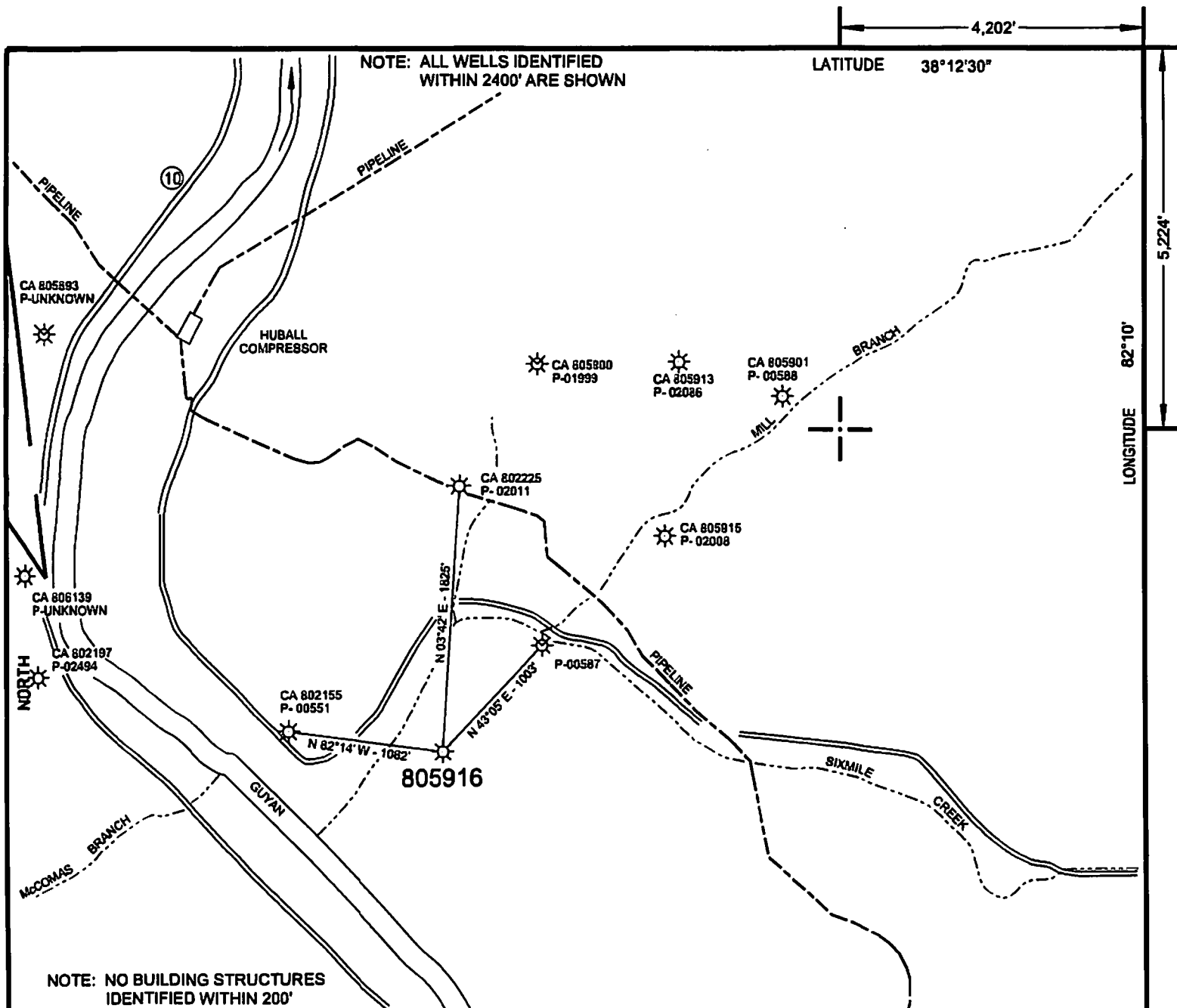
(SIGNED) *Paul E. Miller*
R.P.E. _____ L.L.S. 647



STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION OIL AND GAS DIVISION		DATE	FEBRUARY 10, 20 15	
		OPERATOR'S WELL NO.	805916	
WELL TYPE: OIL ___ GAS ___ LIQUID INJECTION ___ WASTE DISPOSAL ___ (IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW ___		STATE	COUNTY	PERMIT
LOCATION: ELEVATION 689' WATER SHED SIXMILE CREEK		47	043	01992 P
DISTRICT LAUREL HILL COUNTY LINCOLN				
QUADRANGLE BRANGLAND, WV 7.5'				
SURFACE OWNER MARY B. TATE		ACREAGE		
OIL & GAS ROYALTY OWNER		LEASE ACREAGE		
LEASE NO. 1045190		04/24/2015		
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____				
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___				
TARGET FORMATION _____ ESTIMATED DEPTH _____				
WELL OPERATOR CHESAPEAKE APPALACHIA, L.L.C. DESIGNATED AGENT JESSICA GREATHOUSE				
ADDRESS PO BOX 18496, OKLAHOMA CITY, OK 17354-0496 ADDRESS PO BOX 6070, CHARLESTON, WV 25362				

FORM WW-6

COUNTY NAME PERMIT



SURFACE HOLE
 STATE PLANE WV
 NORTH/SOUTH ZONE NAD 1927
 N - 436,922.96 : E - 1,660,527.53
 LATITUDE: (N) 38.1939801
 LONGITUDE: (W) 82.1812625
 UTM, NAD83
 17 - 84W TO 78W, METERS
 N - 4,228,007.208 : E - 396,572.512

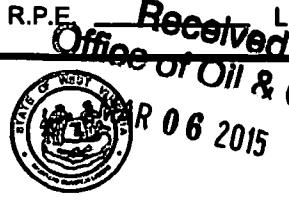
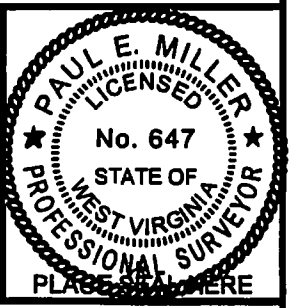
Received
 Office of Oil & Gas

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO.	805916 P&A.DGN
DRAWING NO.	805916 P&A
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1:200
PROVEN SOURCE OF ELEVATION	MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(SIGNED) *Paul E. Miller*
 R.P.E. _____ L.L.S. 647



STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 OIL AND GAS DIVISION

DATE FEBRUARY 10, 2015
 OPERATOR'S WELL NO. 805916
 API WELL NO. 47 043 01992 P
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 689' WATER SHED SIXMILE CREEK
 DISTRICT LAUREL HILL COUNTY LINCOLN
 QUADRANGLE BRANCHLAND, WV 7.5'

SURFACE OWNER MARY B. TATE ACREAGE -
 OIL & GAS ROYALTY OWNER _____ LEASE ACREAGE _____
 LEASE NO. 1045190

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG

TARGET FORMATION _____ ESTIMATED DEPTH _____
 WELL OPERATOR CHESAPEAKE APPALACHIA, L.L.C. DESIGNATED AGENT JESSICA GREATHOUSE
 ADDRESS PO BOX 18496, OKLAHOMA CITY, OK 17354-0496 ADDRESS PO BOX 6070, CHARLESTON, WV 25362

FORM WV-6

COUNTY NAME
 PERMIT

04/24/2015